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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,539	07/09/2003	Alvin Kobashikawa	AK-P1	5180
26793	7590	12/16/2004	EXAMINER	
LEIGHTON K. CHONG OSTRAGER CHONG & FLAHERTY (HAWAII) 841 BISHOP STREET, SUITE 1200 HONOLULU, HI 96813			CUEVAS, PEDRO J	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/618,539

Applicant(s)

KOBASHIKAWA ET AL.

Examiner

Pedro J. Cuevas

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/14/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6, 8, 13, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.

Patent No. 4,002,416 to Axford (prior art document submitted by applicant).

Axford clearly teaches the construction of a motor powered by wave action comprising:

a stable platform (45) secured to a seabed position (11) in the sea and elevated above the seabed on pier structures (13);

a lever arm (26) having a proximal end pivotably mounted to the platform, a distal end extending in a vertical direction toward the sea surface, and is connected to a reciprocating cradle coupled through a pair of connecting rods for dual reciprocating action of the pump;

a wave-energy absorbing panel (25) coupled to the distal end of the lever arm and oriented to absorb the impulse wave energy of waves moving through the sea, said panel moving in oscillating motion with the ebb and flow of wave motion, and mounted to the lever arm and a connecting rod telescoped to the pump extends at a high angle substantially vertically to a distal connecting point to the lever arm; and

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a fluid pump (column 2, lines 48-65) having a piston rod coupled to the lever arm for applying pressure to intake fluid in the pump with the oscillating motion of the panel in order to provide a high-pressure fluid output for high-pressure uses;

wherein the panel has a major part of its surface area positioned within a sea subsurface region defined as approximately a depth of $L/2$ below the sea surface in the vicinity of the seabed position of the device (Figure 1).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-5, 10-12, 14-17, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,002,416 to Axford in view of U.S. Patent No. 6,139,750 A to Graham.

Axford disclose the construction of a motor powered by wave action as disclosed above.

However, it fails to disclose a desalination unit employing the high-pressure fluid output from the pump to produce a desalinated water output.

Graham teach the construction of a water desalination system (Figure 6) employing the high-pressure fluid output from a variable capacity pump to produce a desalinated water output, having:

a piston head (80) and radially positioned pipes along the sides of its pump bore (56) which are controlled by respective valves (62) so that the volume of the pump can be

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regulated by opening or closing of the valves, and one-way outlet valves (110) for releasing pressures inside the pump to vary the pump capacity;

a one-way valve (106) for controlling the intake of intake seawater through an intake line and another one-way valve for controlling the outflow (column 6, line 56) of pressurized fluid through an outlet line;

and a desalination unit (30) positioned in alignment with the pump in a downstream direction of wave motion and presents no greater surface area profile to wave motion than the pump, for the purpose of providing a method of desalinating water which comprises pumping water to be desalinated to a filter element consisting of reverse osmosis membranes defining salt passages, causing a pressure drop in the water flowing to the filter element and simultaneously introducing turbulence into the water flow, and feeding the turbulent water at the lower pressure into the salt passages of the filter element (column 3, lines 4-11).

It would have been obvious to one skilled in the art at the time the invention was made to use the water desalination system disclosed by Graham on the motor powered by wave action disclosed by Axford for the purpose of providing a method of desalinating water which comprises pumping water to be desalinated to a filter element consisting of reverse osmosis membranes defining salt passages, causing a pressure drop in the water flowing to the filter element and simultaneously introducing turbulence into the water flow, and feeding the turbulent water at the lower pressure into the salt passages of the filter element.

5. With regards to claims 14 and 17, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the platform adjustable in height above the seabed and the coupling of the panel to the lever arm, since it has been held that the

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provision of adjustability, where needed, involves only routine skill in the art. *In re Stevens*, 101 USPQ 284 (CCPA 1954).

6. With regards to claim 16, it would have been obvious to one having ordinary skill in the art at the time the invention was made to attach the motor to a submersible structure that can be raised or lowered to and from the seabed depths and also relocated, since it has been held that making an old device portable or movable without producing any new and unexpected result involves only routine skill in the art. *In re Lindberg*, 93 USPQ 23 (CCPA 1952).

7. With regards to claims 15 and 20, it should be emphasized that “apparatus claims must be structurally distinguishable from the prior art.” MPEP 2114. *In re Danly*, 263 F. 2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) it was held that apparatus claims must be distinguished from prior art in terms of structure rather than function. In Hewlett-Packard Co. v Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), the court held that: “Apparatus claims cover what a device is, not what it does” (emphases in original). To emphasize the point further, the court added: “An invention need not operate differently than the prior art to be patentable, but need only be different” (emphases in original).

8. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,002,416 to Axford in view of U.S. Patent No. 4,371,788 to Smith, Jr.

Axford disclose the construction of motor powered by wave action as disclosed above.

However, it fails to disclose the proximal end of the lever arm being connected to a pivotable base plate, which has opposing ends coupled to connecting rods of an opposing pair of pumps.

Smith, Jr. teach the construction of an energy device powered by the motion of water beneath waves comprising lever arms having a proximal end connected to a pivotable base plate, which has opposing ends coupled to connecting rods of an opposing pair of pumps (Figures 21 and 22) for the purpose of achieving a 180° phase shift between the traveling wave and the reflected wave.

It would have been obvious to one skilled in the art at the time the invention was made to use the lever arm arrangement disclosed by Smith, Jr. on the motor powered by wave action disclosed by Axford for the purpose of achieving a 180° phase shift between the traveling wave and the reflected wave.

9. With regards to claim 9, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use multiple lever arms coupled to multiple stages of pumps, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,002,416 to Axford in view of U.S. Patent No. 5,975,865 A to Manabe.

Axford disclose the construction of motor powered by wave action as disclosed above.

However, it fails to disclose a pump having an intake for intake seawater that is buoyant or floats on the surface of the sea.

Manabe teach the construction of a pump activated by wave energy comprising a pump having an intake (23) for intake seawater that is buoyant on the surface of the sea for the purpose of vertically supporting hollow piston tube 3.

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It would have been obvious to one skilled in the art at the time the invention was made to use the buoyant seawater intake disclosed by Manabe on the motor powered by wave action disclosed by Axford for the purpose of vertically supporting a hollow piston tube.

Conclusion


11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (571) 272-2021. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pedro J. Cuevas
December 13, 2004


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